IN THE CLAIMS

Please amend the claims as follows:

1 (Currently Amended). A microphotonic device comprising:

a flexible membrane structure that can experience strain; and

a waveguide element formed on said flexible membrane structure so that when said flexible membrane structure is strained, said waveguide element is tuned to a selective amount.

2 (Currently Amended). The microphotonic device of claim 1, wherein said flexible membrane structure comprises a sub-micron SiO_2 layer.

3 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a microring resonator.

4 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a microracetrack resonator.

5 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a 1-dimensional photonic crystal.

6 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a 2-dimensional photonic crystal.

7 (Original). The microphotonic device of claim 5, wherein said 1-dimensional photonic crystal comprises holes.

8 (Original). The microphotonic device of claim 7, wherein said selective amount comprises approximately 1%.

9 (Original). The microphotonic device of claim 3, wherein said selective amount comprises 0.2%.

10 (Currently Amended). The microphotonic device of claim 1 further comprising at least one piezoelectric actuator that is coupled to said flexible membrane so as to produce said strain.

11 (Currently Amended). A method of forming a microphotonic device comprising:

providing a flexible membrane structure that can experience strain; and

forming a waveguide element on said flexible membrane structure so that when said flexible membrane structure is strained said waveguide element is tuned to a selective amount.

12 (Currently Amended). The method of claim 11, wherein said flexible membrane structure comprises a sub-micron SiO_2 layer.

13 (Original). The method of claim 11, wherein said waveguide element comprises a microring resonator.

14 (Original). The method of claim 11, wherein said waveguide element comprises a microracetrack resonator.

15 (Original). The method of claim 11, wherein said waveguide element comprises a 1-dimensional photonic crystal.

16 (Original). The method of claim 11, wherein said waveguide element comprises a 2-dimensional photonic crystal.

17 (Original). The method of claim 15, wherein said 1-dimensional photonic crystal comprises holes.

18 (Original). The method of claim 17, wherein said selective amount comprises approximately 1%.

19 (Original). The method of claim 13, wherein said selective amount comprises 0.2%.

20 (Currently Amended). The method of claim 11 further comprising providing at least one piezoelectric actuator that is coupled to said flexible membrane so as to produce said strain.